PRELIMINARY NOTE ON THE LIFE HISTORY OF *SYNEMON* (LEPIDOPTERA, FAM. CASTNIIDAE)

By NORMAN B. TINDALE, S.A. Museum.

The members of the family Castniidae are found almost exclusively in South America and Australia. The life-history is known in a few exotic species only, one of which is an internal feeder in the bulbs of orchids. The Australian species, all of which belong to the genus *Synemon*, are day-fliers, superficially resembling butterflies in shape, colour, and flight. Their life-history has been a puzzle to entomologists for many years.

On November 16, 1927, while collecting at Highbury, about ten miles north-east from Adelaide, in company with Mr. J. D. O. Wilson, freshly emerged examples of the brilliant orange and black *Synemon sophia parthenoides* Felder were captured. They were flying low over a sandy swamp amongst low tussocks of a grass *(Amphipogon strictus)* and a sedge *(Lepidosperma carphoides)*.

The moths were mating freely in the hot sunshine at noon, the males pursuing the females, which were usually to be seen flying close to the ground. When one of the latter settled, head upwards, with open wings, upon a grass stem, a male alighted below her with wings drooped, and advanced slowly up the stem on the opposite side until facing and on a level with her. Copulation took place in this attitude; on being disturbed they flew a few yards away and remated in the same manner.

Search in the vicinity revealed abandoned pupal skins projecting from slightly oval, silk-lined holes in the sandy ground, in a similar manner to the larger cases of root-feeding Hepialidae such as *Pielus*. A close examination showed *Synemon* wing-scales adhering to the insides of these shells. The shafts from which the skins projected were vertical for some 60 mm., about 7 mm. in greatest diameter, and closed by a cap of silk, covered with sand, which had been pushed up like a hinged lid during the exit of the moth. At the lower end the silk-lined shaft was somewhat constricted and connected with a horizontal tunnel leading towards the roots of an adjacent clump of *Lepidosperma*.

On November 23 (again in the company of Mr. Wilson) the tunnels were traced definitely to the roots of the sedge, where characteristic holes were noted in the bases of the stems. After much digging, a whitish, rather inactive larva was discovered, secreted in a silken chamber amongst the roots of a sedge. Subsequently it was found that tussocks of *Lepidosperma* attacked by the larvae

were more easily pulled up than sound ones, owing to the extensive injuries caused to their root system. More than a dozen larvae, varying in length from 10 mm. to 24 mm. were located, but no living pupae were found.

All the moths flying on this day were worn, and it was evident that the season was nearly finished. The females had evidently almost completed egg-laying; no act of deposition was observed, but mature eggs were dissected from one example.

The eggs are creamy-white, oblong-elliptic in shape (2·7 x 0·9 mm.), bearing numerous longitudinal ridges, between which are many transverse impressions.

The larvae are short, stout, cylindrical, with the anterior segments much swollen; the head is small, and the legs and prolegs are feebly developed. The body is white in colour, with the head and appendages darker.

The pupal skin is 23 mm. in length, light castaneous in colour, with the abdominal segments darker. The dorsal half of each abdominal segment bears a median transverse row of stout elevated spines resembling those of some Hepialid pupae.

A detailed account of the life-history and a study of the pupal wing-venation will be given as soon as advanced larvae and living pupae are secured.